Before The
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Redevelopment of Spectrum To Encourage Innovation In The Use Of New Telecommunications Technologies	)	ET Docket No. 92-9

REPLY COMMENTS
OF
EDISON ELECTRIC INSTITUTE

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SUMMARY

Edison Electric Institute ("EEI") demonstrated in its Comments that electric utilities depend upon the proven reliability of 2 GHz operational-fixed facilities to ensure the continued provision of a high quality, reliable, and cost effective supply of electricity to the nation -- as well as to protect the safety of life and property. Because the Commission failed to consider that its proposal has the potential to negatively impact the integrity and reliability of the nation's electric generation, transmission and distribution systems, as well as to potentially increase costs to electric systems and ratepayers, EEI urged the Commission to further consider the serious impact of its proposal on the public interest.

The Comments filed in this proceeding overwhelmingly support the position that the Commission's proposal herein requires further consideration before any rules can be adopted. Most of the Comments support the position that the Commission's proposal, if implemented, would inappropriately and prematurely reallocate scarce frequency spectrum. This reallocation would be accomplished by summarily eliminating frequency allocations for incumbent 2 GHz licensees, who are efficiently and effectively providing essential services to the public, for the purposes of accommodating speculative new services and technologies for which there is no proven market, demand or equipment.

In addition, with few exceptions, the Comments demonstrate a flaw in the Commission's conclusion that incumbent licensees can operate at frequencies above 2 GHz with the same extremely high reliability as that provided at 2 GHz. First of all, it has not been determined whether adequate frequency spectrum is even available at higher bands to accommodate displaced licensees. Second, while some commenting parties allege the Commission is correct in its reliability assumption, a careful analysis of those positions illustrates that when all important technical factors relating to microwave path engineering are considered (e.g., rain and multipath fade, thermal ducting and temperature inversions), communications operations at higher bands, if they are practically capable of being implemented, are not as reliable as operations at existing 2 GHz allocations. Third, a determination must be made as to whether it is even necessary for any or all incumbent licensees

to move if the numerous frequency sharing proposals can be implemented.

In light of the foregoing considerations and in reviewing the Comments filed, EEI found at least ten major issues which must be addressed by the Commission before it can adopt any rules in this proceeding so that such rules will be adopted in a rational and reasoned manner, based upon evidence in the record. Based on the Comments filed, before any further action is taken, the Commission must solicit further Comments and consider: (1) the definition and proposed implementation of the "new" technologies and services to be provided; (2) the requirement to allocate 220 MHz of spectrum for these "new" services; (3) the balancing of the public interest in existing and proposed services; (4) the basic criteria for frequency allocations; (5) the feasibility of reallocating other frequency bands; (6) the potential sharing of frequency spectrum between existing and proposed services; (7) the adoption of a comprehensive frequency initiative which provides displaced licensees with adequate substitute frequency spectrum and appropriate rules for operations in that spectrum; (8) the reliability of communications at frequencies above 2 GHz for incumbent licensees; (9) the actual cost of relocating incumbent users: and, (10) the impact of reimbursement on "new" licensees if the 2 GHz band, as opposed to some other frequency band, is reallocated.

Final rules should not be adopted absent further consideration of the foregoing issues.

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Edison Electric Institute ("EEI"), by its attorneys, pursuant to the provisions of Section 1.415(c) of the Commission's Rules, hereby submits its Reply Comments relating to the Commission's Notice of Proposed Rule Making ("NPRM") in the above-captioned proceeding.

I. INTRODUCTION

1. As stated in its Comments, EEI is the association of the nation's investor-owned electric utilities whose member companies generate approximately 78 percent of all electricity in the nation. EEI submitted its Comments in this proceeding with the intention of illustrating the complexity and uniqueness of the electric utility industry, and its requirement for and dependence upon the proven reliability[1] of 2 GHz operational-fixed microwave facilities -- facilities which are necessary to assure the provision of a high quality, reliable, and cost effective supply of electricity to the

[1] In some cases 99.9993% or 3.68 minutes of outage in a one year period. EEI Comments, p.6, n.6.

nation, as well as to protect the safety of life and property.

2. The North American Electric Reliability Council ("NERC") pointed out in its Comments that more than 250 electric utilities operate about 6,000 microwave links in the 1.85-2.20 GHz band with extremely high reliability. NERC indicated that this extremely high reliability is the key to preventing major disturbances and blackouts.[2] NERC also stated that because of the essential nature of electric utility communications, these communications are at least as important as police, fire and other public safety communications.[3]

3. The United States Department of Energy ("DOE") explained that the 2 GHz operational-fixed facilities provide the necessary communications reliability to meet the exacting standards of electric utilities. As a result of the major blackout of the Northeastern United States in 1965, the DOE recommended that the

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[2] NERC Comments p. 1. EEI explained in its Comments that the use of 2 GHz private operational-fixed facilities, which the Commission proposes to take from electric utility licensees, are essential to the requisite real time control of all aspects of electrical system and network operations. It is these systems and operations which protect, control, manage, coordinate and operate the electric network safely, reliably, efficiently and without error. EEI explained that all electric utilities in the United States are part of one of three interconnected electric transmission grids, and that the operation of these grids depends upon coordination among all electric utilities primarily through the use of 2 GHz facilities.

[3] NERC Comments, p. 1. EEI indicated in its Comments that 2 GHz facilities are used routinely to provide communications related to "life-line" services to hospitals, police and fire departments, emergency preparedness and disaster recovery, restoration of service following outages, trouble reporting and interconnection with, and control of, mobile radio facilities for dispatching personnel for emergencies, repairs and maintenance.

electric utilities employ more reliable communications. As a result of this recommendation, many electric utilities implemented communications systems employing the 2 GHz facilities which are the subject of this proceeding.[4]

4. Because of the requirement for extremely reliable communications which are met by 2 GHz communications facilities, and which may not be available in higher frequency bands or from alternative sources, EEI urged that the integrity and reliability of the nation's electric generation, transmission and distribution systems not be compromised by the Commission, and that in these difficult economic times, there be no unwarranted additional costs to electric systems or ratepayers as a result of Commission action in this proceeding based upon an inadequate consideration of important issues in this proceeding.[5]

II. ADDITIONAL CONSIDERATION IS REQUIRED BEFORE THE COMMISSION CAN ADOPT FINAL RULES IN THIS PROCEEDING

5. At the outset, it must be noted that neither EEI nor most of the commenting parties is opposed to an allocation for newly emerging technologies, and they recognize there may be potential

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[4] DOE Comments pp. 1-2.

[5] EEI urged the Commission to conduct an in depth examination of the potential impact of its NPRM, and to seriously consider alternatives to displacing 2 GHz electric utility licensees presently operating in a spectrally efficient manner, providing public service benefits, and protecting the safety of life and property.

benefits to the nation that such an allocation could generate.[6] The major concern of EEI, DOE and NERC is that the Commission has not considered the potential impact of its proposal to reallocate certain portions of the 2 GHz frequency band on the reliability, integrity and efficiency of the nation's electric network.[7] Indeed, an overwhelming majority of the parties filing Comments took the position that, for various reasons, the Commission's NPRM was based on an "inchoate, ill-defined and premature proposal."[8] EEI's position, which is bolstered by a majority of the approximately 150 commenting parties in this proceeding, continues to be that proven, efficient and effective communications services and technologies, essential to the public interest, should not be summarily displaced for what may be a futile effort to accommodate speculative new services and technologies for which there is no

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[6] In fact, a very small number of EEI members that do not rely heavily on 2 GHz facilities are not opposed to the Commission's proposal in its present form.

[7] EEI urged the Commission to consider the impact of its proposal, the potential harm to the reliability of the nation's electric network, with no less consideration than that afforded to the reliability of the nation's public switched telephone network. See, also, Comments of the Utilities Telecommunications Council ("UTC") concerning the impact on electric and other utilities; Comments of the American Petroleum Institute ("API") concerning the impact on the petroleum and natural gas industries; Comments of the Public Safety Microwave Committee concerning the impact on public safety facilities; and, Comments of the American Association of Railroads ("AAR") concerning the impact on the nation's railroads (with respect to the railroads, the importance of effective and efficient operations was recently emphasized by the President and Congress when it was necessary to intervene to prevent a labor strike).

[8] See American Association of Railroads ("AAR") Comments at 5.

proven demand, market or equipment.

6. EEI, as well as most of the other parties commenting in the proceeding, are extremely concerned that the Commission carefully consider the voluminous record in this proceeding before taking any further action. There was great concern expressed in many Comments that it appears to be a foregone conclusion of the Commission that it intends to implement its rule making proposal, without any further consideration.[9]

7. Contrary to the NPRM, a review and analysis of the voluminous Comments filed in this proceeding overwhelmingly support EEI's position that further consideration is clearly required in this proceeding before the Commission can adopt any rules. Such further consideration is necessary so that the rules adopted do not violate the letter and spirit of administrative fairness, due process and equal protection.[10]

8. The Commission's NPRM, as evidenced by the widely divergent Comments filed, plainly illustrates that the NPRM, because of its vagueness and lack of specificity, is actually equivalent to a Notice of Inquiry. EEI and most other commenting parties have urged the Commission to consider carefully the record developed in this proceeding, and to issue a Further Notice of

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[9] See, e.g., AAR Comments at p. 8, describing the Commission's proposal as a "fait accompli."

[10] See, generally, Comments of API, UTC and AAR.

Proposed Rule Making in accordance with the record evidence.[11] If such action is not taken, the Commission will not develop the requisite record upon which it can base a "reasoned decision."[12] Accordingly, if rules are adopted without further consideration, such a decision will not withstand judicial review.[13]

A. THE COMMENTS FILED ILLUSTRATE AT LEAST TEN MAJOR AREAS WHICH REQUIRE ADDITIONAL CONSIDERATION BY THE COMMISSION

9. A review and analysis of the voluminous Comments filed clearly illustrates that there are at least ten major issues in the NPRM, all of which must be investigated, considered, and resolved through further proposed rule making proceedings, if a decision in this proceeding is to withstand judicial scrutiny. A discussion of the major issues requiring additional consideration based upon the Comments filed is set forth below.

1. Definition of "New Telecommunications Technologies and Services"

10. The Commission failed to define "newly emerging technologies" in its NPRM. Consequently, there was no reference to exactly what services would be accommodated by the proposed frequency allocation. There is some reference to Personal

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[11] See, generally, Comments of Southwestern Bell, American Personal Communications, McCaw Cellular Communications, NTIA, UTC, API, AAR, Alcatel.

[12] See, e.g., API Comments at pp. 36-44.

[13] Comments of AAR, p. 7, citing National Association of Broadcasters v. FCC, 740 F.2d 1190, 1195 (D.C. Cir. 1984) ("in its zeal to promote [a] new technology, the FCC [should not give] short shrift to certain of its statutory obligations.")

Communications Services ("PCS"), but these services are yet to be defined by the Commission.[14] There is no indication as to what these services will encompass, how they will be operated, or how they will be licensed.[15] Absent a definition of these technologies and services, the Commission is totally unable to: (a) make the necessary determinations as to whether these technologies and services should be allocated valuable and scarce frequency spectrum; and, (b) conduct the required comparative analysis of "new" versus incumbent uses of the spectrum in the public interest.

2. Requirement to Reallocate 220 MHz Of Spectrum At This Time

11. Aside from there being no definition of the proposed services, there has been no demonstration that the allocation of 220 MHz of valuable and scarce frequency spectrum is necessary at this time.[16] There has been no demonstration that such a large

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[14] The Commission is expected to issue a NPRM in Gen Docket No. 90-314, Amendment of the Commission's Rules to Establish New Personal Communications Services, but there has been no indication as to when this NPRM may be issued.

[15] See, e.g., Comments of McCaw Cellular Communications, Inc., pp. 8-9.

[16] For example, Telesciences points out in its Comments, at p. 13, that Digital Termination Service ("DTS") and Direct Broadcast Service ("DBS") have had frequencies allocated for some time, but they are not yet commercially available on a widespread basis. Similarly, GTE explains in its Comments, at p. 7, that providing a spectrum reserve will not guarantee successful services. GTE described a "newly emerging technology" frequency allocation in the United Kingdom which failed due to a lack of demand. Southwestern Bell commented that the record does not support an allocation of the size proposed.

allocation -- the largest land mobile allocation in history[17] -- is in proportion to the need for the proposed services. Quite simply, this allocation exceeds all current land mobile (common carrier and private) allocations combined. These existing services have certainly flourished and developed over the years on a lesser amount of frequency spectrum. It should also be noted that, if spectrum sharing proves successful (see discussion at Section II.A.6. infra.), the potential need for the proposed spectrum allocation could be reduced or even eliminated.

12. Additionally, because there was no definition of proposed services, there has been no analysis of newly emerging technology services to determine whether they are worthy of specific frequency allocations. There has been no examination of whether any of these services is viable, or whether there is a demand for the services (especially, for example, in light of new cellular telephone digital technology currently being implemented), or whether some of the proposed services could be better provided by means of wire. Moreover, because of the lack of definition of the newly proposed services, the value of the "new" services to the public interest cannot be compared to the value of those services provided by existing users. Such a comparison is mandated by the Communications Act of 1934, as amended.[18]

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[17] See Comments of API, p. 45; Southwestern Bell, p.7 et seq.

[18] See, generally, Comments of API, UTC, AAR and Public Safety Microwave Committee.

3. Public Interest Considerations

13. The Commission must carefully consider the impact on the provision of essential services if existing 2 GHz licensees are displaced. Just four years ago, the Commission rejected the notion of reallocating these frequencies for advanced television ("ATV") because the favorable propagation characteristics of the 2 GHz band would make it impractical to move incumbent users to higher frequencies with less favorable propagation characteristics, and would involve a "severe detrimental impact on existing [2 GHz] services ...."[19] When Congress amended the Communications Act in 1982, it indicated that, with respect to spectrum to be made available for private land mobile services, the Commission should consider, consistent with Section 151 of the Act, whether such actions will "promote the safety of life and property ...."[20] Without an appropriate balance of public interest considerations in this proceeding, there could be a costly, premature displacement of highly efficient microwave users with little apparent benefit to the public interest.[21]

4. Basic Criteria For Frequency Allocations

14. The Commission has failed to follow the basic criteria specified for the reallocation of frequency spectrum as specified

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[19] Comments of AAR, p. 4, citing Tentative Decision and Further Notice of Inquiry, 3 FCC Rcd 6520, 6530 (1988).

[20] 47 U.S.C. Sec. 332(2). Section 151 of the Act provides for the promotion of the safety of life and property through the use of wire and radio communications. 47 U.S.C. Sec. 151.

[21] See Comments of Telesciences, p. 13.

by the Communications Act of 1934, as amended, and its own pronouncements. Under the Act, the Commission is required to consider whether the allocation will promote the safety of life and property or improve the efficiency of spectrum use.[22] Additionally, it has been established that radio used to protect the safety of life and property is more deserving of consideration than those luxury or convenience services.[23] This justification must be considered against the financial, societal and operational impact on other frequency bands which may be more appropriate locations for the proposed spectrum reserve.[24]

5. Feasibility Of Reallocating Other Frequency Bands

15. The Commission failed to carefully analyze what other frequency bands would be good candidates for reallocation, and

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[22] 47 U.S.C. Section 151.

[23] S. Rep. No. 191, 97th Cong. 1st Sess. 14 (1981). See also, Draft Report of Proposed Allocation, January 15, 1945, republished in Order of Inquiry, Docket 11997, 22 Fed. Reg. 2684, 2685, Appendix A (1957) cited at Comments of GTE, n.24, outlining the six general principles used to guide allocation decisions; Comments of AAR, p.10 ff., explaining the Commission's "traditional spectrum allocation decision making framework" which is a part of its public interest evaluation, citing Notice of Inquiry, 2 FCC Rcd 5125, 5144 (1987); "Not all radio services should be evaluated alike. Radio services which are necessary for safety of life and property obviously deserve more consideration than those services which are more in the nature of convenience or luxuries." FCC Office of Plans and Policy Working Paper No. 15, J.O. Robinson, "Spectrum Management Policy in the U.S.: An Historical Account (April 1985) Appendix A at 4. See, also, Comments of Public Safety Microwave Committee at p.9; Comments of UTC at p. 6 et seq.

[24] See, e.g., Comments of AAR, pp. 9 ff.

failed to seek Comments on this issue. The NPRM merely concluded after a very brief evaluation, which itself was flawed,[25] that the 2 GHz operational-fixed band was most appropriate for reallocation. By taking such action, the Commission failed to consider and solicit comment on other frequency bands which could be made available at less cost to incumbents -- as well as new users -- with no harmful impact on public health and safety. Many allegations have been raised that demonstrate there are other, perhaps more suitable frequency bands (in the non-government, government, or shared government/non-government allocations) that could be reallocated which would lead to less impact on the public interest, less disruption of existing services and more expeditious implementation of newly proposed services.[26]

6. Sharing Of Frequency Allocations

16. Many of the Commenting parties have indicated that the 2 GHz frequency band can either be shared by new technology licensees and existing users or, at least indicated that this possibility must be explored.[27] Obviously, if the frequency band can be

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[25] See, e.g., Comments of UTC, Section II.

[26] See, generally, Comments of API, APC, IEEE CCIP, Alcatel, UTC, pp. 21 et seq.

[27] Examples of some of the Comments concerning this premise are as follows: The Comments of McCaw Cellular Communications, Inc., at pages 23-25, state that of 38 PCS Pioneer's Preference Requests placed on Public Notice by the FCC, 24 seek preferences on the basis of innovations that can share or co-exist with 2 GHz licensees. See, also, Comments of Comsearch at p.15 alleging that as technology progresses, most sharing problems will be resolved, Comsearch stated: "our computer modeling and measurements indicate

shared, there is no need for the band clearing proposal by the Commission. For any sharing to take place there would, of course, need to be rules adopted to specify frequency coordination procedures, interference criteria and transmitter identification.[28] Similarly, consideration should be given to factors relating to whether it is necessary to force all existing 2 GHz users off the frequencies, or whether it is possible to have some "phased-in" implementation, on an as needed basis, because there may be more demand for these newly emerging technology services in certain areas than others.[29]

17. Additionally, with relation to sharing proposed in the NPRM between the "new" services and incumbent state and local government users, it should be noted that several parties agree

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that through proper frequency coordination procedures, spectrum sharing can be accomplished between these emerging technologies and existing users." Id.; Comments of American Personal Communications at pp. 2-4 indicating that the 2 GHz frequencies can be shared and only some users will need to relocate, and the vast majority of incumbents will never asked to relocate; Pacific Telesis Comments at p. 8 indicate that spectrum sharing should be encouraged; Telesciences Comments state that there should be no relocation until the further technical feasibility of spectrum sharing is explored; Other examples of Comments discussing potential frequency sharing include those of SCS Mobilcom, Associated PCN, Southwestern Bell (the FCC would better serve the public interest by waiting for results of experiments before making a final and potentially irreversible spectrum allocation decision), AAR, Centel, Rolm, and Telocator. Taking an opposite view on the sharing issue is PCN-NY which states in its Comments, at 35, that no frequency sharing techniques have proven to provide acceptable interference protection; consequently, co-primary sharing will not work.

[28] Comments of Public Safety Microwave Committee, p.5 et seq.; Comments of Comsearch, p.15.

[29] GTE Comments at pp. 12-15; See, also, Comments of US West and API.

with EEI's analysis that exempting only state and local government 2 GHz users from the reallocation is arbitrary and capricious, because other similarly situated entities are denied the exemption.[30]

7. A Comprehensive Frequency Initiative

18. If incumbent 2 GHz users are to be relocated to higher frequency bands, it is clear from the Comments filed that there is a great deal of concern relating to the Commission's failure to ensure that adequate substitute frequency spectrum, with appropriate rules and regulations, will be provided. A comprehensive frequency plan, applicable to all proposed replacement bands, is necessary to: define eligibility; prescribe channelization, path lengths, and channel loading; establish frequency coordination and interference criteria; and, establish antenna standards.[31] Absent such a proposal, the Commission is

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[30] EEI pointed out that under the Commission's proposal, a municipally owned electric utility, buying electricity from an investor-owned utility, and providing the same service, would be exempt from reallocation while the investor-owned electric utility would not. EEI Comments p.17; see, also, Comments of Associated PCN, pp. 5-6 wherein it is stated that with appropriate sharing techniques, if state and local governments are exempted from the relocation requirement, there is no reason why other existing users would have to relocate; Comments of AAR at Sec. III.C., pp. 27-31, stating that when Congress provided, at Section 151 of the Communications Act, for the protection of the safety of life and property, it did not limit these considerations to state and local government licensees.

[31] See, e.g., Comments of Telecommunications Industry Association Point-To-Point Microwave Committee; Ameritech; NTIA; DOE; Alcatel Comments, p. 32-34, stating that advocating reallocation and mandatory migration without a full consideration of how displaced users would operate constitutes arbitrary and capricious action. The Alcatel Comments go on to indicate that the

literally leaving current 2 GHz users without frequency spectrum alternatives, something which is tantamount to taking the allocation, which was found to be necessary and in the public interest, away from the incumbent users.

8. Reliability Of Communications At Higher Frequencies

19. EEI and several of the commenting parties have explained the difficulties of moving to higher frequency spectrum, and the problems inherent therewith.[32] The Comments demonstrate that these concerns are legitimate, based on years of experience with microwave engineering.

20. In its Comments, Motorola alleges that current 2 GHz fixed users can be readily accommodated, with no loss of reliability, in higher point-to-point frequency bands. Motorola cites its study, "Reliability Comparisons For 2 and 6 GHz," attached as Appendix B to its Comments. It appears that this report oversimplifies factors affecting the proper engineering of microwave systems. This oversimplification leads the inexperienced and non-technical reader to an incorrect conclusion.

21. A proper microwave engineering analysis of the Motorola

Commission's NPRM is too simplistic to confront critical issues relating to how "orphaned" 2 GHz users would operate in higher frequency bands. Comments of Pacific Telesis, p. 17 (A feasible alternative must be available before users are required to move.)

[32] For example, IEEE CCIP Comments state that it may not be feasible for certain 2 GHz paths to use higher frequency bands; Centel points out in its Comments that technical, zoning and environmental factors may create circumstances where relocation is unrealistic or impractical.

study illustrates that it presents a gross overstatement because it is premised only on free-space-loss over average terrain. From an engineering standpoint, no microwave path is "average" and, while longer paths are lower in number than shorter ones, the critical nature of the path, the feasibility of moving to a higher frequency, and the need to employ repeaters are factors ignored by the Motorola study.[33]

22. A myriad of factors must be considered in engineering a microwave path, and each microwave path must be considered on a case-by-case basis.[34] Contrary to Motorola's conclusions, free space loss and average terrain considerations are not the major factors that cause microwave paths to fade and not perform in accordance with requisite reliability standards. Fades are caused by factors which good engineering dictates be included in analyzing a 2 GHz and 6 GHz microwave path (but which Motorola ignores), namely: (a) temperature inversions; (b) thermal ducting; (c) rain fade; and, (d) multipath fade.[35] By failing to consider these important factors, and relying on "averages" only, the study inaccurately concludes that reliability at 6 GHz is the same as that at 2 GHz. When all necessary factors are taken into consideration for specific paths, EEI submits that the Motorola

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[33] The expense involved in transitioning to a higher frequency is similarly not considered. See Motorola Study, p. 1.

[34] See, e.g., EEI Comments at p. 12.

[35] See, e.g., Comments of IEEE CCIP, pp. 2-3.

study cannot withstand objective scrutiny.[36]

23. A more technically oriented and accurate study is attached to the Comments of Associated PCN Company at Appendix A.[37] This study analyzes 2 GHz and 6 GHz microwave paths and concludes that 6 GHz paths will require an additional five to ten dB of path gain to achieve similar multipath availability as that achieved at 2 GHz. While this path loss can be overcome on a purely technical basis, several other technical, practical and financial considerations are integral to a resolution of the problem.[38]

9. Cost of Relocating Incumbent Users

24. The Commission's analysis fails to consider the actual cost involved in moving existing users to higher frequency bands, or to alternative communications. Several parties have indicated that the OET Study relied upon by the Commission dramatically

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[36] For example, on the first page of the study, a conclusion is made that "performance on a line of sight path is not very frequency dependent in the range 1 to 10 GHz." This conclusion is only correct for very short line-of-sight paths. For longer paths, while temperature inversions, thermal ducting, rain fade and multipath fade have a noticeable impact on 6 GHz, there is field experience which indicates that these factors have little, if any, impact on 2 GHz facilities. OCOM Comments, pp. 4-5, state that even with the best engineering, at higher frequencies outages occur during heavy thunderstorms when intense thundercells and rain are present.

[37] "Creating New Technology Bands For Emerging Telecommunications Technology," Telecommunications Design Services, Inc., April 29, 1992.

[38] Id. at p. 2. These practical considerations include increasing antenna size at each site, which would require structural enhancements to be made to subject towers, or the addition of repeaters, which would require the use of additional antenna sites. Of course, these requisite modifications would include substantial expense. Id. at pp. 2-3.

underestimates the costs of relocation, perhaps by several billion dollars.[39] In considering relocation costs, the Commission failed to consider costs other than hardware replacement, costs such as training, station installation, test equipment, spares, tower structure fortification for higher performance antennas, additional engineering and legal costs, and FCC fees.[40]

10. The Impact of Reimbursement

25. If the Commission insists on adopting its proposal and displacing incumbent 2 GHz licensees, newly emerging technology licensees will be required to reimburse incumbent users for vacating the spectrum in accordance with a plan such as that proposed by EEI[41]. The Commission must consider the actual cost of relocation (as discussed above) and the impact this cost will have on "new" licensees, as well as (a) where these new licensees will obtain necessary funding; (b) whether the need for these funds will delay the implementation of new services; and (c) whether the necessity for such funds will cause prices for the newly proposed services to be higher. All of these considerations are necessary in determining whether the frequency band proposed by the FCC is, in fact, the best frequency band for the reallocation proposed.

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[39] See, generally, Comments of Associated PCN, pp. 5-6, and Appendix A attached thereto; see, also, Comments of AAR, GTE, Pacific Telesis, API. Some of these Comments even suggest that the Commission's hardware costs are too low.

[40] Comments of GTE, p. 17; see, also, Comments of AAR, API, Pacific Telesis.

[41] EEI Comments, Section VIII.

III. CONCLUSION

26. As outlined above in the brief discussion concerning the record in this proceeding, the Commission's NPRM actually raises more questions than it answers. Because of the major issues which remain unanswered, the record does not provide support for the Commission to adopt rules as a result of its NPRM. Rather, the record points to inadequacies in the record which must be fully considered by the Commission, and put out for public comment. Such action is mandated by both the Communications Act and the Administrative Procedure Act before the Commission can embark on a potentially irreversible reallocation decision that would seriously impact the public interest in maintaining essential electric utility communications services and cause the potentially unnecessary migration of incumbent users to the detriment of the public interest.

WHEREFORE, THE PREMISES CONSIDERED, the Commission should issue a Further Notice of Proposed Rule Making in this proceeding in accordance with the Comments filed and consistent with the views expressed herein.

Respectfully submitted,

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